# Developmental Test & Evaluation
# An OSD Perspective

PEO / SysCom Conference

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# Purpose

- Make PMs aware of changes that affect the way you plan and execute your test programs :
  - Increased emphasis on structuring robust Developmental Test and Evaluation program (in Systems Engineering context)
  - Test planning challenges in evolutionary and System–of–Systems (S–o–S) acquisition

# Congressional Concerns (FY03 NDAA)

- *DOT&E 2001 Annual Report* :
  - Inadequate funding of DoD T&E infrastructure led to inadequate testing of major weapon systems
- *DSB 2000 Assessment of Resources and Capabilities of DoD T&E facilities* :
  - Increase in programs failing IOT&E
  - Testing not being done adequately
  - Not delivering high-quality, reliable equipment
  - Test process not adequately funded
  - Corners cut in testing
  - Not enough Government oversight of industry
  - Increased use of waivers in OT&E

**AT&L leadership stated rigorous DT&E "builds confidence" that programs will successfully pass OT&E**

# DoD T&E Policy

## DoD 5000

- *DoD Instruction 5000.2, Operation of the Defense Acquisition System*, (Enclosure 5)
  - *Interim Defense Acquisition Guidebook*, (Chapter 3)

**Revised to incorporate increased emphasis on robust DT&E**

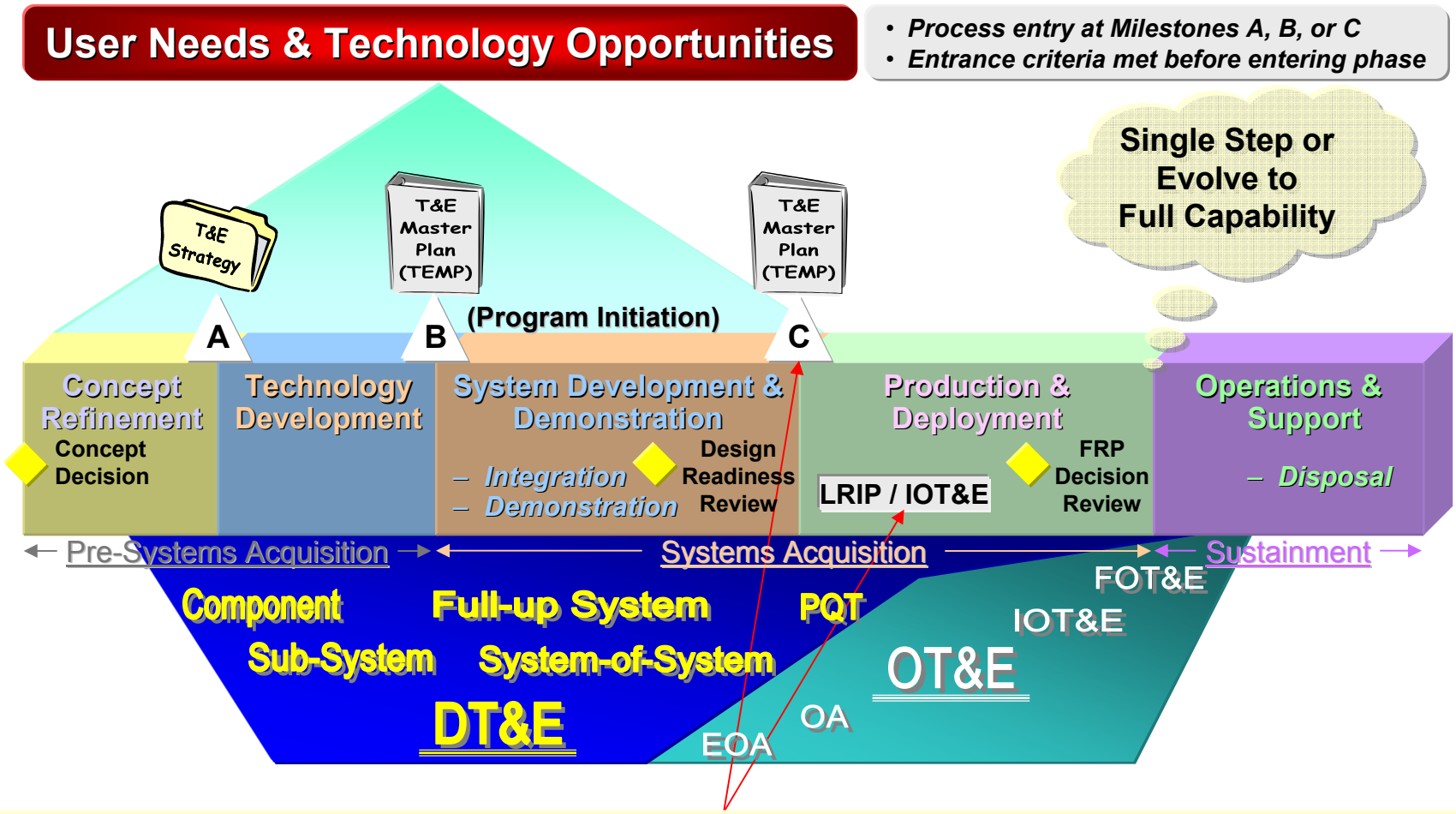
# DoD DT&E Policy & Guidance

- The PM shall design DT&E objectives appropriate to each phase and milestone of an acquisition program
- DT&E shall be event driven and monitored by success criteria
- Requires establishing IOT&E entrance criteria
- Increased emphasis on robust Operational Test Readiness process
- Decision to determine readiness for IOT&E elevated to SAE–level
- Defined " Best Practices "
- Defined objectives for developing a robust T&E strategy
- Early involvement of T&E Community

# Importance of DT&E in Acquisition
## (DT&E is a critical part of good SE)

- Provides an opportunity to find problems early (Learn) — Failure in DT&E is OK
- Provides information about risk and risk mitigation
- Assesses technical performance and system maturity
- Provides indication of program's development progress
- Confirms weapon system meets technical requirements
- Confirms weapon system's readiness to enter IOT&E
- Provides essential information on which to base acquisition decisions

# Acquisition Management Framework




**New Acquisition Model — MS C is prior to IOT&E. DT&E importance Increased — Frequently multiple LRIP decisions prior to IOT&E**

# Test Planning Challenges
## (In Evolutionary and S–o–S Acquisition)

- New approach to acquisition :
  - Joint capabilities focus
  - Emphasis on spiral and incremental development
  - Net Centricity / Systems–of–Systems

**Traditional test and evaluation will not suffice :**

  - Not adequate for spiral or incremental capabilities
  - Range limitations
  - Affordability
  - S–o–S availability

# New Approach to T&E Required

- Build a little — Test a little :
  - To address evolutionary acquisition
- Complement T&E strategy with modeling and simulation :
  - Requires increased M&S funding, including VV&A
- Increased complexity and limited resources requires :
  - Early test planning
  - Focused testing on high–risk areas
- Joint distributed simulation testing (JDEP–like) :
  - Requires infrastructure and simulation development

# PM Keys to Success

- View T&E as an " Enabler " to success vice " Stumbling Block "
- Establish and fully fund a rigorous DT&E program to include consideration of S–o–S testing and M&S
- Involve the T&E Community early
- Don't make T&E the bill payer
- Increase testing when problems arise to facilitate learning — Plan for failure contingencies
- Relate DT&E to user’s needs — A proving ground for OT&E
- Do it right the first time and avoid having to do it over again after a failed OT&E

# Summary

- Our ultimate goal is to help programs, and ensure mission success, through robust testing
- Achieving this goal requires your support !

**Let me know your ideas…**
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And visit our website at:
**www.acq.osd.mil/ds/se/dte/**